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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/595,655	06/16/2000	Shigeki Fujii	51270-245645	2592

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EXAMINER

LAO, LUN S

ART UNIT PAPER NUMBER

2644

DATE MAILED: 06/27/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b> 09/595,655	<b>Applicant(s)</b> FUJII, SHIGEKI	
	<b>Examiner</b> Lun-See Lao	<b>Art Unit</b> 2644	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 15 April 2005.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-16 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-16 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |                                                                                                                        |                                                                                         |
|------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                                            | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____                                                |

## DETAILED ACTION

### *Introduction*

1. This action is response to the amendment filed on 04-15-2005. Claims 1 and 6 have been amended and claims 1-16 are pending.

### ***Claim Rejections - 35 USC § 102***

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

3. Claims 1-4, 6-8, 10-11, 13-14 and 16 are rejected under 35 U.S.C. 102(e) as being anticipated by Tateishi (US PAT 5,960,391).

Consider claim 6, Tateishi teaches a sound processing apparatus comprising:

a signal separator (see fig.1, 9) that separates an input audio signal of each of at least one system into a plurality of separated signal components (such as a speech signal component and a noise signal component as show in fig.1) corresponding respectively to a plurality of different types of sound source (such as, aural signal and noise signal, and (see fig.1 and col. 14 line 13-col. 15 line 7));

a sound processor (9) that subjects each signal component of at least part of the plurality of separated signal components to individual sound processing

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suitable for the signal component (col.12 line 55-col. 13 line 67); and

an output controller (9) that outputs the plurality of separated signal components (such as a speech signal component and a noise signal component) as at least one audio signal after each signal component of the at least part thereof is subjected to the individual sound processing (see figs.1-2 and col. 14 line 13-col. 15 line 7).

Consider claims 7-8, Tateishi teaches a sound processing apparatus of the output controller (see figs 1-2, 9) synthesizes the plurality of separated signal components (such as a speech signal component and a noise signal component) with the at least part thereof subjected to the individual sound processing into a synthesized audio signal, and outputs the synthesized audio signal (col.12 line 55-col. 13 line 63); and a sound processing apparatus of the output controller (9) outputs the plurality of separated signal components (such as a speech signal component and a noise signal component) with the at least part thereof subjected to the individual sound processing, separately as audio signals (see figs.1-2 and col. 14 line 13-col. 15 line 7).

As to claims 1-3, these are method claims of claims 6-8 respectively. Thus note claims 6-8, respectively for rejection.

Consider claim 4, Tateishi teaches a sound processing method of the input audio signal contains an ambient sound component (see fig.1, (noise)) and an on-the-spot speech sound ( speech) component of a live broadcasting, and said at least part of the plurality of separated signal components (such as a speech signal component and a noise signal component)) comprises said ambient sound component (noise, ) and said

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on-the-pot speech sound component (speech and see (figs. 1-2 and col. 14 line 13-col. 15 line 7)).

Consider claims 10-11, Tateishi teaches a sound processing apparatus of the signal separator (see fig.1, 9) comprises a plurality of signal enhancement/suppression devices (see fig.11, rnn and col.19 line 10-col. 20 line 55) that enhance part of a plurality of signal components contained in said input audio signal, and suppress remaining signal components (see col.15 line 20-62); and a sound processing apparatus (see fig.1, 9) of the input audio signal comprises audio signals of a plurality of channels (figs. 10-11 and col. 18 line 5-col. 19 line 10), and said signal separator (see fig.1, 9) comprises a plurality of signal separators (see fig.11, rnn) corresponding respectively to said plurality of channels (voice and noise), and wherein each of said plurality of signal separators (see fig.11, rnn and col.19 line 10-col. 20 line 55) performs predetermined sound processing by supplementarily referring to at least one of the audio signals of at least one other channels than a channel corresponding thereto, thereby improving accuracy of separation of the input audio signal (see fig.1, such as speech and noise) of the corresponding channel into a plurality of separated signal components (figs. 1-2 and col. 14 line 13-col. 15 line 7).

Consider claims 13-14 and 16, Tateishi teaches a sound processing apparatus of the sound processor selectively eliminates (see fig.1,9) at least part of the plurality of separated signal components (such as speech and noise), and instead uses an externally input audio signal (fig. 1 and col. 12 line 55-col. 13 line 63); and a sound processing apparatus (see fig.1) of the sound processor changes (9) sound quality or

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voice quality of each signal component of at least part of the plurality of separated signal components (figs. 1-2 and col. 14 line 13-col. 15 line 7); and a sound processing apparatus (see fig. 1) of the sound processor (9) changes speed relative to a time axis or speech speed of each signal component of at least part of the plurality of separated signal components (see figs. 1-2, and col. 12 line 55-col. 13 line 67).

***Claim Rejections - 35 USC § 103***

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over Tateishi (US PAT. 5,960,391).

Consider claim 9, Tateishi teaches a sound processing apparatus of the signal separator (see fig. 1-2, (9) ) performs spectrum analysis upon said input audio signal to extract a specific signal component (see col. 16 line 57-col. 17 line 13), but fig. 1 does not clearly teach subtracts the extracted specific signal component from the input audio signal to obtain a remaining signal component. However, fig. 10 teaches that the sound processing apparatus subtracts (see fig. 10 (-)) the extracted specific signal component from the input audio signal to obtain a remaining signal component (see col. 18 line 5-col. 19 line 10).

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Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teaching of fig.10 into fig.1 to provide a better speech out put signal.

6. Claims 5, 12 and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tateishi (US PAT. 5,960,391) in view of Tubman (US PAT. 5,569,038).

Consider claim 12 and 5, Tateishi teaches that a sound processing apparatus as of the sound processor comprises the at least part of the plurality of separated signal components (see fig. 1-2 and col. 12 line 55-col. 13 line 67); but Tateishi does not clearly teach a sound field controller that performs sound field control processing upon each signal component.

However, Tubman teaches that a sound field controller (see fig.1,8 (console)) that performs sound field control processing upon each signal component (36,57,59 and see col.10 line 1-40).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teaching of Tubman into Tateishi to provide an acoustical prompt to the Karaoke participant.

Consider claim 15, Tateishi teaches that a sound processing apparatus as of the sound processor comprises the at least part of the plurality of separated signal components (figs. 1-2 and col. 14 line 13-col. 15 line 7); but Tateishi does not clearly teach a sound processor changes pitch of each signal component.

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However, Tubman teaches a sound processing apparatus (see fig.1,8) of the sound processor changes pitch (by console) of each signal components (see col.10 line 1-40).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teaching of Tubman into Tatteishi to provide an acoustical prompt to the Karaoke participant.

### ***Response to Arguments***

7. Applicant's arguments with respect to claims 1-16 have been considered but are moot in view of the new ground(s) of rejection.

### ***Conclusion***

8. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Kate (US PAT. 4,454,609) is recited to show other related the sound processor.

9. Any response to this action should be mailed to:

Mail Stop \_\_\_\_ (explanation, e.g., Amendment or After-final, etc.)

Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

Facsimile responses should be faxed to:  
**(703) 872-9306**

Hand-delivered responses should be brought to:  
Customer Service Window  
Randolph Building  
401 Dulany Street  
Alexandria, VA 22314

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Lao,Lun-See whose telephone number is (571) 272-7501. The examiner



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can normally be reached on Monday-Friday from 8:00 to 5:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Chin Vivian, can be reached on (571) 272-7848.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Technology Center 2600 whose telephone number is (571) 272-2600.

Lao, Lun-See  
Patent Examiner  
US Patent and Trademark Office  
Knox  
571-272-7501

Date 07-17-2005



VIVIAN CHIN  
SUPERVISORY PATENT EXAMINER  
TECHNOLOGY CENTER 2600